The clean solution

Multi tank system

M012FWTA10M1-30

Food waste collection system



Original operating instructions

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1 Notes on the manual

This manual is part of the operating instructions for this product. The related documents are also part of the operating instructions.

The operating instructions must be read before first use, kept for future reference and be accessible at all times. Failure to observe the operating instructions may result in damage to persons and property.

This manual can be downloaded at the following addresses: ➦ *www.meiko.com* or ➦ *https://partnernet.meiko-global.com.*

1.1 Scope of applicability

This manual applies to the following system:

- **Quad tank system**
  M012FWTA10M1-20

1.2 Related documents

In addition to this manual, there are other documents that are available depending on the authorisation.

Included in the scope of delivery for the operator:

- EC/EU declaration of conformity
- Quick-start guide
- Wiring diagram
- Assembly plan
- Collection tank/suction tank drawing(s) (depending on order)
- Supplier documentation

For the MEIKO authorised service technician:

- Dimension sheet
- Installation instructions for optional components, if necessary
- Service manual

1.3 Illustration

1.3.1 Warning notices

Warning notices in this manual have a standardised structure and are differentiated according to the severity of the hazard.

⚠ DANGER

Type and source of danger

The warning notice draws attention to a hazard with a high degree of risk which, if ignored, will result in death or serious injury.

⚠ WARNING

Type and source of danger

The warning notice draws attention to a hazard with a medium degree of risk which, if ignored, can result in death or serious injury.

⚠ CAUTION

Type and source of danger

The warning notice draws attention to a hazard with a low degree of risk which, if ignored, can result in minor to moderate injuries.

NOTICE

Type and source of danger

A notice draws attention to a possible danger which, if ignored, can lead to material damage to the product or to equipment in the surrounding area.

1.3.2 Info

Info

This section draws attention to important or useful information about the product or its use.

1.3.3 Markup elements

The following markup elements are used in this manual for emphasis.

Symbol	Description
▶	Requirement to be met for a subsequent action instruction
1.	Numbered action steps of an action instruction
➡	■ Intermediate result of an action step ■ Result of an action instruction
■	A preceding square indicates a bullet point in a list
[ ]	Terms in square brackets indicate keys, soft keys and buttons on touchscreens
(1)	Round brackets in the text with a number refer to position numbers in an associated figure
Italic text	Texts shown on the display are labelled in italics in the manual. These include, for example: ■ Operator messages ■ Warning messages ■ Error messages ■ Status indicators

Tab. 1: Markup elements

1.3.4 Illustrations

The illustrations contained in this document are not necessarily true to the original or to scale. The illustration may be schematic in nature and may deviate from the original, e.g. due to modifications to the product, but without diminishing the facts or comprehensibility.

2 Declaration of conformity

This section reproduces the content of the EC/EU Declaration of Conformity for the product. The signed EC/EU Declaration of Conformity with serial number is enclosed with the product.

We hereby declare under our sole responsibility the conformity of the product with the essential requirements of the following EC Directive:

- 2006/42/EC, Machinery Directive, OJEU L157/24, 09/06/2006

Furthermore, we declare the conformity of the product with the following EU directives:

- 2014/30/EU, Directive on Electromagnetic Compatibility, OJEU L96/79, 29/03/2014
- 2011/65/EU, Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment, OJEU L174/88, 01/07/2011
- The safety objectives set out in the Low Voltage Directive 2014/35/EU (OJEU L96/357, 29/03/2014) were met in accordance with Annex I, No. 1.5.1 of the Machinery Directive.
- 2014/53/EU Directive on the placing of radio equipment on the market

3 Safety

3.1 Intended use

This section describes the purposes for which and the conditions under which the product may be used in accordance with the manufacturer's specifications. These specifications must be adhered to in order to ensure safe operation and a long product service life.

The tank system is intended for the homogenisation and interim storage of shredded organic preparation waste and food waste of the kind that is usually generated in large-scale kitchens, hotels, food service and communal catering.

In terms of its technology and interfaces, the tank system is designed to be operated with MEIKO infeed stations.

The tank system may only be operated by trained personnel.

Only operate the tank system when it is in perfect working order.

Only operate the tank system within the limits specified in the ambient conditions.

If servicing is required, only use original spare parts from the manufacturer. This is the only way to guarantee perfect function and safety.

The tank system is not approved for operation in a potentially explosive environment.

The tank system is designed for continuous operation.

Technical modifications or conversions are not permitted.

3.2 Foreseeable misuse

This section provides information on misuse that experience has shown can occur even though it does not correspond to the intended use. These specifications must be adhered to in order to avoid accidents, damage to the product and possible hazards to persons.

- Do not feed in any food waste or other objects through the tank system maintenance openings.
- Do not operate the tank system with maintenance openings open.

3.3 Safety notices

The product has been manufactured in line with the state of the art and the established safety regulations and standards. Nevertheless, its use may result in functional hazards for the user or other persons. Therefore, read and observe the following safety notices before using the product.

Danger of injury from entering a danger zone!

Unauthorised persons might be in or enter the danger zone during transport, assembly, commissioning, maintenance and repair work. This can lead to injuries.

- Block off the danger zone and mark it for third parties.
- Remove unauthorised persons from the danger zone.
- Only qualified persons should perform work on and with the machine.
- Keep the working areas of the machine clear.
  ➦ *Chapter 4.7 'Workstations' on page 28*

Unqualified personnel can cause serious injuries and considerable damage to property!

If unqualified personnel carry out work on the machine or are in the working area, hazards arise that can cause serious injuries and considerable damage to property.

- Make sure that only trained and experienced personnel operate the machine.
- Make sure that staff learning to use the machine are supervised by a trained and experienced operator at all times.

- Clearly define the staff's responsibilities.
- Observe the personnel qualifications specified in this manual.
- Confirm training in writing.

Wear personal protective equipment!

Missing or unsuitable personal protective equipment increases the risk of health effects and injury to people.

- Define and provide personal protective equipment for the respective application.
- Only use personal protective equipment that is in proper condition and provides effective protection.
- Adapt personal protective equipment to the person, e.g. size.

Personal protective equipment includes, for example:

- Protective gloves
- Safety shoes
- Safety glasses
- Protective clothing

Risk of slipping due to leakage of liquids!

Puddles may form on the floor due to liquid leaking. There is a risk of slipping!

- Be careful when there is an accumulation of liquids.
- Immediately remove any liquids on the floor.
- Always wear suitable safety shoes.

Keep safety devices in working order!

If safety devices are missing or damaged, people can be seriously injured or killed.

- Replace damaged safety devices immediately.
- If the safety devices are damaged, shut down the machine.
- Never tamper with, bypass or deactivate safety devices.
- Assemble dismantled safety devices and other parts before commissioning and move them into the protective position.

Make sure safety labels and signs remain legible!

Safety labels and signs on the machine provide warning of hazards at danger points and are important components of the machine's safety equipment. A lack of safety labels and signs increases the risk of serious and fatal injuries to people.

- Clean soiled safety labels and signs.
- Damaged and unrecognisable safety labels and signs must be replaced immediately.

Electric shock due to live parts!

Live parts are freely accessible when the housing parts are open. Touching live parts can lead to serious electric shocks and injure or kill people.

- Have work on the electrical system carried out by a MEIKO authorised service technician or a qualified specialist workshop.
- Before opening housing parts, always switch off the main switch and secure it against being switched back on.
- Have damaged insulation and components of the electrical system repaired immediately.
- Have damaged power cables replaced immediately.
- When connecting with a mains plug, the mains plug must always be freely accessible.

Risk of suffocation due to CO_2!

Biomass fermentation processes in collection tanks produce the toxic and odourless gas CO_2 in dangerous concentrations. There is a risk of falling unconscious or suffocating when inhaling CO_2. It is therefore forbidden to enter or lean into collection tanks.

3.4 Safety devices

Emergency off button

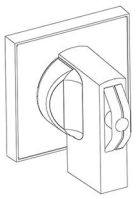


Fig. 1: Emergency off button

The main switch is designed as an emergency off. The emergency off button interrupts the power supply to the machine and can be secured against being switched on again. The emergency off button must be easily accessible and free of obstacles at all times.

3.5 Safety labels and signs

3.5.1 Description of the safety labels

This section describes the safety symbols on the safety labels affixed to the product.

Symbol	Description
	Warning of electrical voltage
	Warning of hot surfaces
	Warning of choking hazard
	No unauthorised access
	Read instructions
	Wear safety eyeware
	Use fall protection
	Wear hand protection
	Wear safety shoes
	Wear protective clothing

3.6 Positions of the safety labels

This section shows the positions of the safety labels affixed to the product.

Cylindrical PE tank

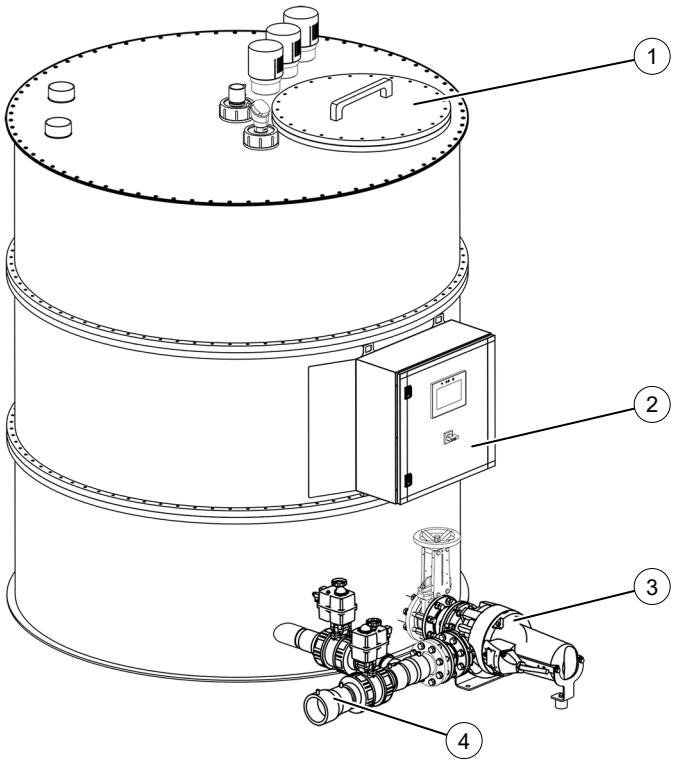


Fig. 2: Safety label for cylindrical PE tank

Position	Safety label
1	
2	
3	
4	

Rectangular PE tank

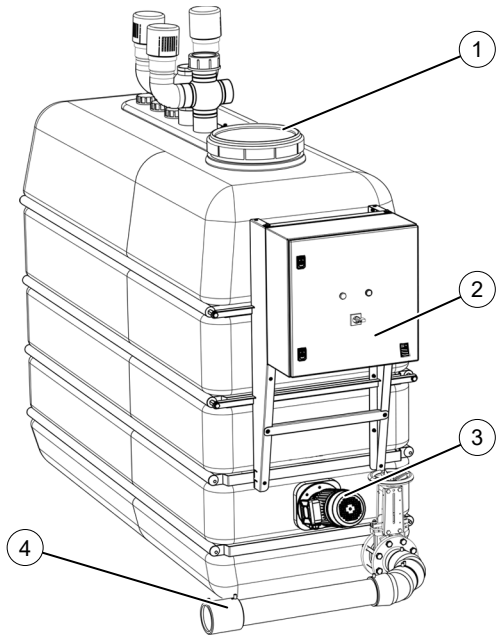


Fig. 3: Safety markings for rectangular PE tank

Position	Safety label
1	
2	
3	
4	

Sensor retaining plate for underground tank

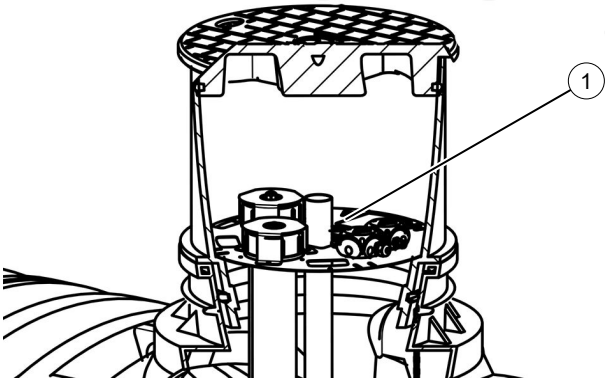


Fig. 4: Safety label for underground tank (example shows a PE underground tank)

Position	Safety label
1	

Booster pump

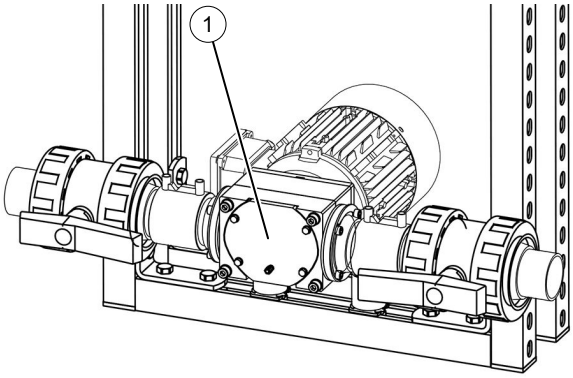


Fig. 5: Safety label for booster pump

Position	Safety label
1	

Discharge box

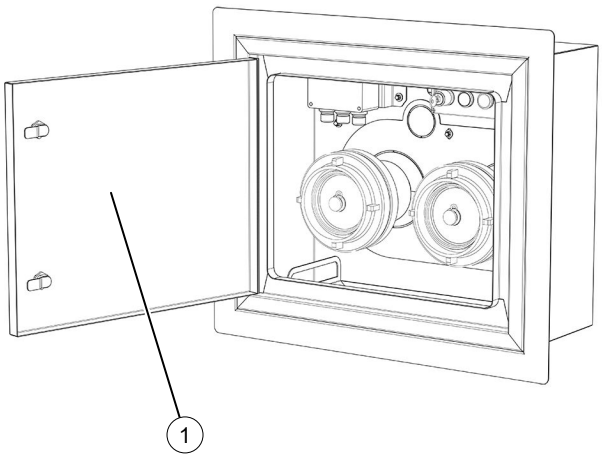


Fig. 6: Safety label for discharge box

Position	Safety label
1	

3.7 What to do in the event of an emergency

In dangerous situations, switch off the main switch and disconnect it from the mains using the main switch provided on site.

3.8 Personnel qualification

This manual specifies the qualifications of the persons listed below for the various tasks:

Carrier

The carrier may transport the machine / system. The carrier must be qualified for the safe transport of sensitive loads.

MEIKO authorised service technician

A MEIKO authorised service technician may carry out all work in the same way as the service technician. In addition, a MEIKO authorised service technician may carry out special setup, maintenance and repair work. MEIKO authorised service technicians must have completed special training from MEIKO.

Operating personnel

The operating personnel may switch the machine / system on and off, operate it in automatic operation, clean it and, if necessary, carry out simple maintenance work as described in the manual. The operating personnel must have been trained by MEIKO or instructed by the operator, provided that this ensures the described qualification. The operating personnel must be older than 14 years.

Service technician

The service technician is authorised to set up, connect and commission the machine, rectify mechanical faults, carry out certain maintenance work and decommission the machine. The service technician must have completed relevant professional training that qualifies them to carry out the work.

The service technician must be qualified as an electrician to work on the electrical equipment. For the purposes of this definition, a qualified electrician is someone who, on the basis of their technical training, knowledge and experience as well as knowledge of the relevant regulations, is able to assess the work assigned to them, carry it out in accordance with the electrical regulations and recognise potential hazards.

4 Product description

4.1 Delivery contents

The delivery contents include:

- Fuel system according to the order
- Documentation

4.2 Functional description

Shredded food waste from one or more infeed stations is pumped directly into the collection tank. Grease and sludge from an optionally connected grease separator are pumped into the collection tank via the connection station (CTU). A homogenisation process in the collection tank keeps the biomass in a homogeneous state. When the collection tank is full, it can be emptied via an externally connected discharge pipe.

4.3 Structure

4.3.1 Cylindrical PE tank

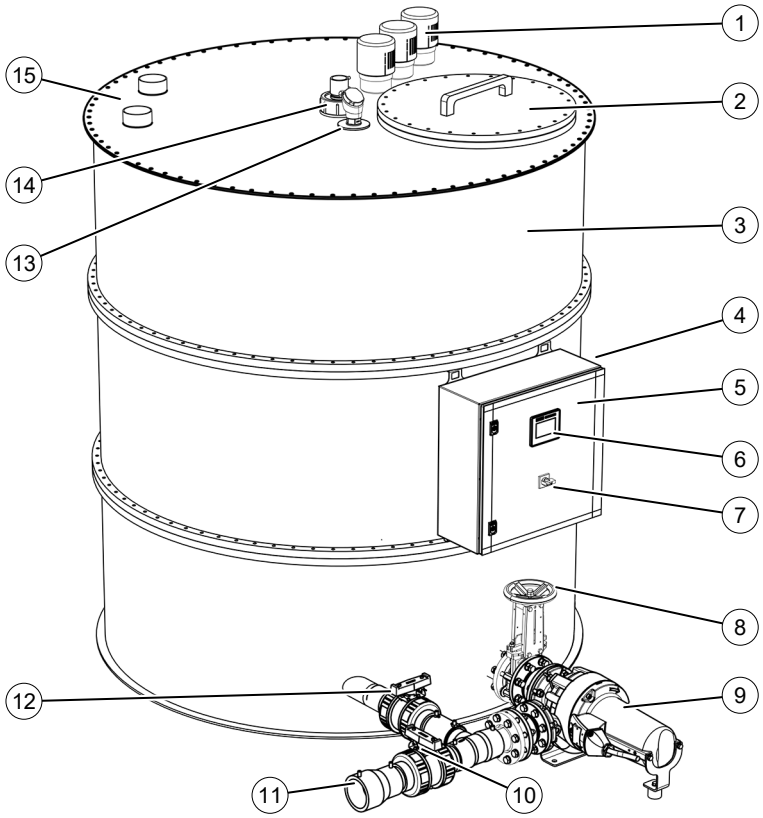


Fig. 7: Cylindrical PE tank (figure shows options)

1 Ventilation valve (3x per tank)
2 Maintenance opening
3 Collection tank
4 Type plate
5 Control cabinet / control system
6 Touchscreen
7 Main switch
8 Collection tank shut-off valve
9 Homogenisation pump
10 Discharge pipe manual shut-off valve
11 Discharge pipe connection
12 Homogenisation pipe manual shut-off valve
13 Level sensor
14 Flushing nozzle (cleaning unit option)
15 Discharge pipe
16 Transport pipe / exhaust air conduit connections

4.3.2 Rectangular PE tank

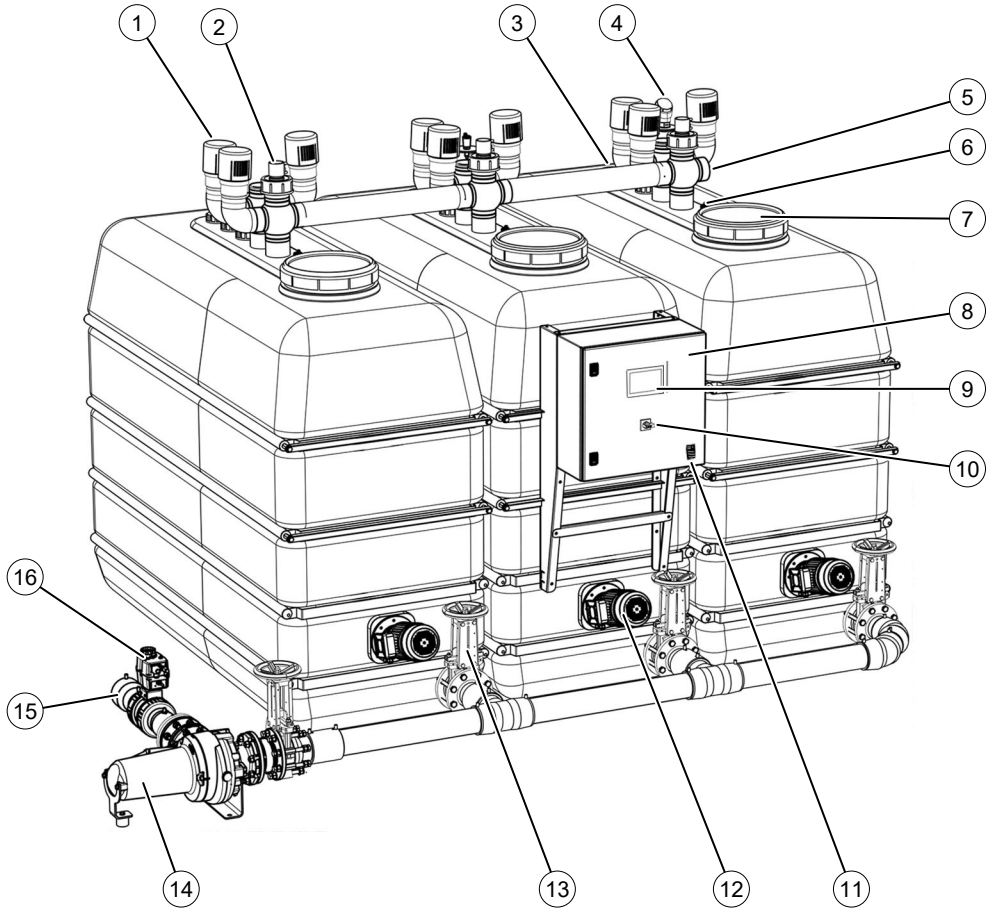


Fig. 8: Rectangular PE tank (figure shows options)

1 Ventilation valve (3x per tank)
2 Flushing nozzle (cleaning unit option)
3 Transport pipe (concealed)
4 Level sensor
5 Connection for exhaust air conduit
6 Overfill sensor
7 Maintenance opening
8 Control cabinet/control system
9 Touchscreen
10 Main switch
11 Type plate position
12 Stirrer
13 Collection tank shut-off valve
14 Discharge-assist pump (optional)
15 Discharge pipe
16 Electric shut-off valve (optional)

The number of tanks may vary

The tank system can be fitted with 1–3 rectangular tanks.

4.3.3 Underground concrete tank

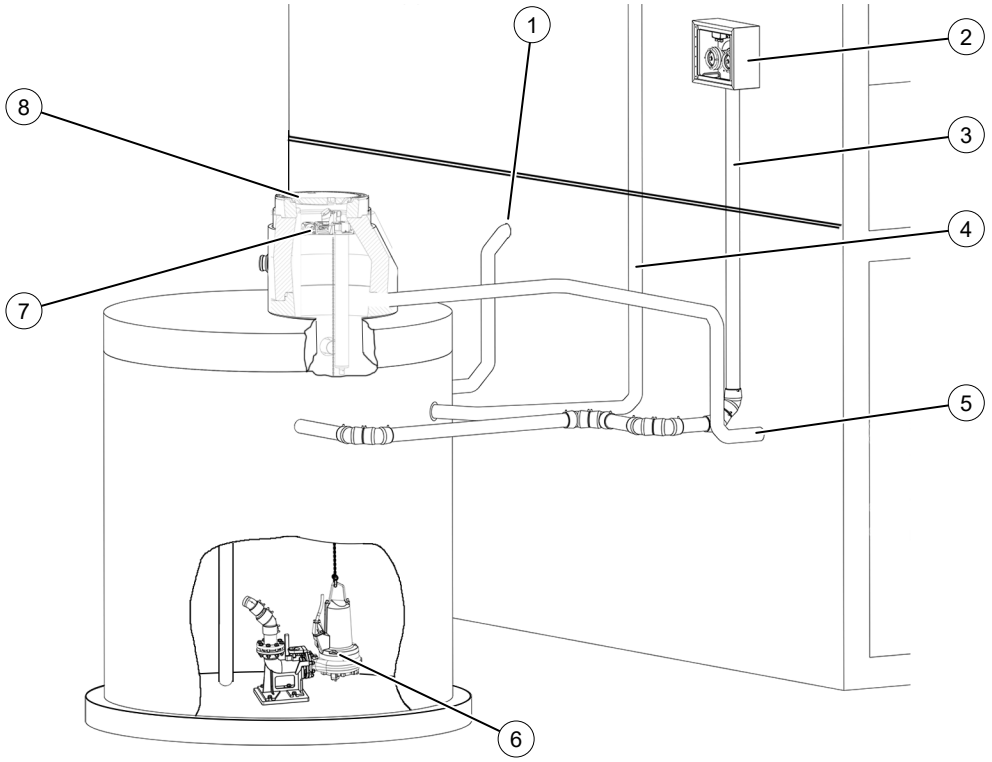


Fig. 9: Underground concrete tank

1 Transport pipe
2 Discharge box
3 Discharge pipe
4 Vent pipe
5 Cable conduit
6 Homogenisation pump (submersible pump)
7 Sensor retaining plate
8 Maintenance opening

4.3.4 PE underground tank

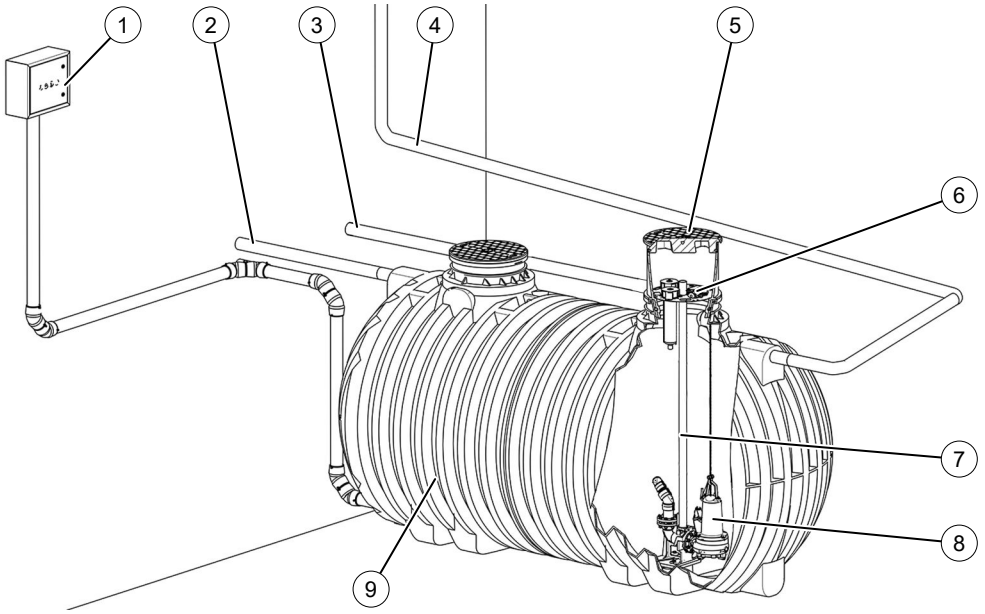


Fig. 10: PE underground tank

1 Discharge box
2 Transport pipe
3 Cable conduit
4 Exhaust air conduit
5 Maintenance opening
6 Sensor retaining plate
7 Pump guide tube
8 Homogenisation pump
9 Tank

4.3.5 Sensor retaining plate

The sensors and the electrical connections are located on the sensor retaining plate. The sensor retaining plate is fitted in the following underground tanks:

- Underground concrete tank
- PE underground tank

Underground concrete tank

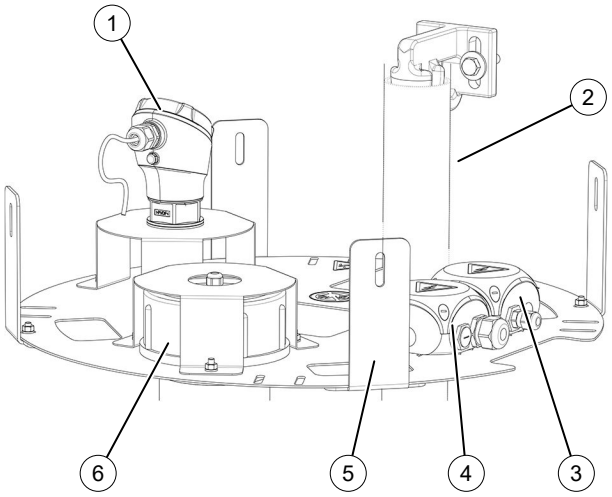


Fig. 11: Sensor retaining plate for concrete underground tank

1 Level sensor
2 Pump guide tube
3 Sensors terminal box
4 Pump terminal box
5 4x holding bracket
6 Overfill sensor

PE underground tank

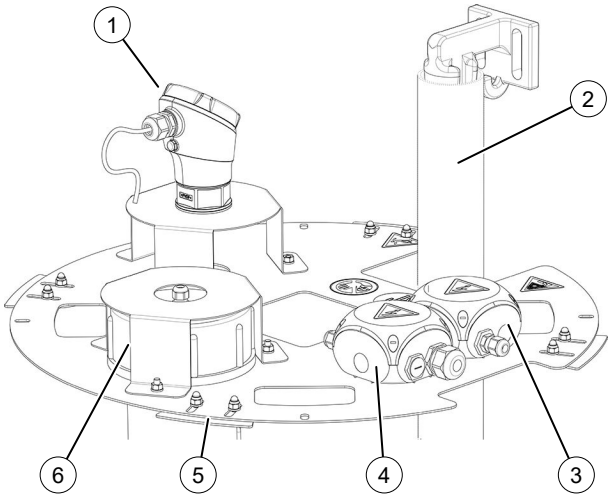


Fig. 12: Sensor retaining plate for PE underground tank

1 Level sensor
2 Pump guide tube
3 Sensors terminal box
4 Pump terminal box
5 4x quarter turn locks, for fixing in the shaft
6 Overfill sensor

4.4 Options

Depending on the order-specific design, various optional modules or functions may be included.

4.4.1 Discharge box

The discharge box is attached to the outer wall.

Discharge box

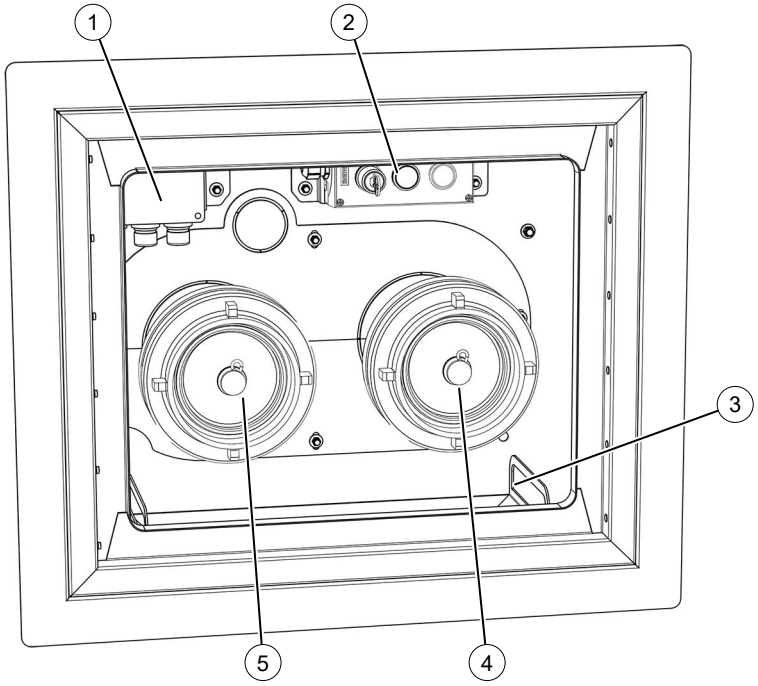
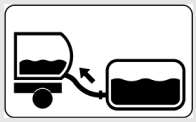
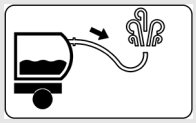


Fig. 13: Discharge box

1 Connection for trace heating (optional)
2 Control elements for the discharge process (Multi tank system only, depending on the configuration)
3 Removable drip tray (optional)
4 Nozzle with blind coupling
5 Nozzle with blind coupling

Symbol	Meaning
	Connection for collection tank
	Connection for foul air extraction pipe
	Connection for grease separator

Tab. 2: Discharge box connection symbols

Control elements

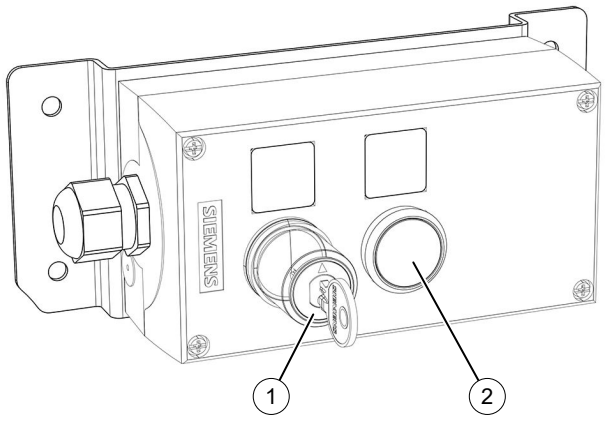


Fig. 14: Discharge box control elements

1 Key switch for discharge process
2 Status indicator signal lamp

4.4.2 Cleaning unit

The cleaning unit supplies the flushing nozzles in the collection tank in order to flush coarse soiling from the walls of the collection tank and to keep the sensors clean.

- In automatic mode, the cleaning unit is started when a defined fill level is reached in the collection tank.
- In manual mode, the cleaning unit can be operated manually via the user interface on the touchscreen.

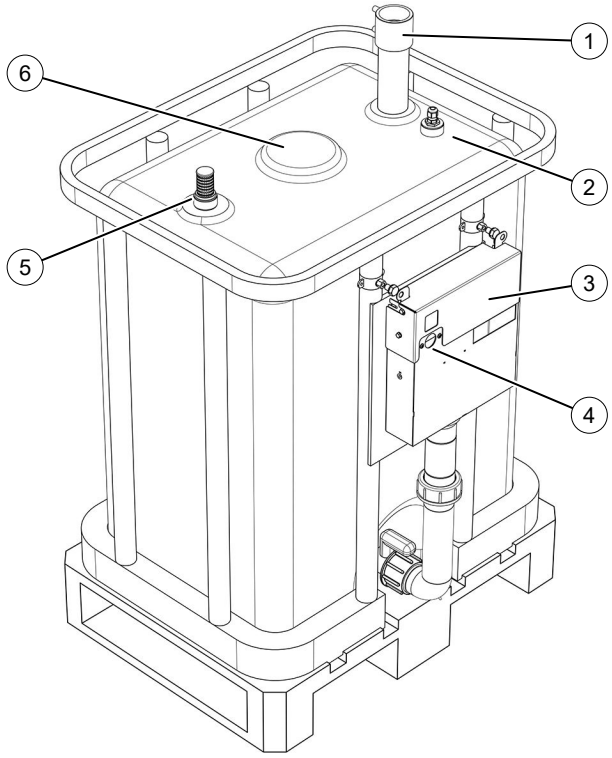


Fig. 15: Cleaning unit

1 Submersible pump pressure pipe
2 Cable gland
3 Water tank with backflow preventer
4 Fresh water connection with flow rate limiter
5 Ventilation valve
6 Maintenance opening

4.4.3 Trace heating

The trace heating ensures that the fluid in the pipes remains free-flowing in areas where there is a risk of frost. It also prevents damage caused by freezing. The display shows the set target temperature. A temperature sensor measures the actual temperature in the non-frost-free area. If the value is below the target temperature, the trace heating is activated until the target temperature is reached.

- Switch-on temperature: 5°C

4.4.4 BoosterPump

The BoosterPump is positioned between the infeed station and the collection tank. It supports the transport of food waste when dealing with particularly large distances between infeed stations and the collection tank or to overcome height differences. BoosterPumps start up when the impeller pump at the respective upstream infeed station starts up. As soon as the impeller pump at the infeed station stops, the BoosterPumps run for a further defined period.

Depending on the system configuration, up to 3 BoosterPumps can be connected in series.

BoosterPump	Run-out time
1. BoosterPump	6 s
2. BoosterPump	12 s
3. BoosterPump	18 s

Tab. 3: Run-out time BoosterPump

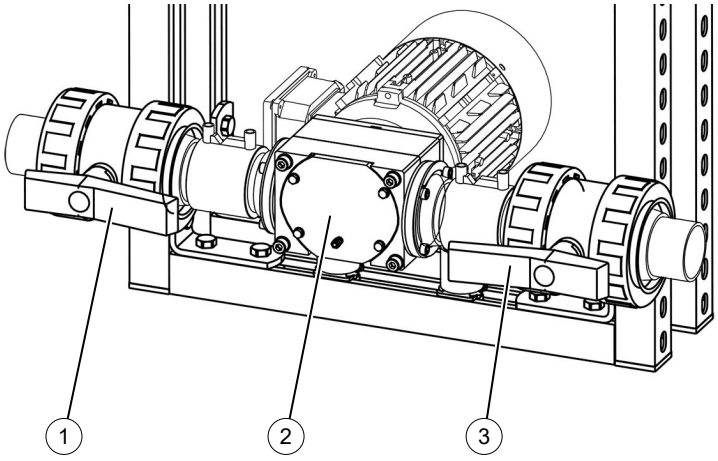


Fig. 16: BoosterPump

1 Transport pipe with shut-off valve
2 Impeller pump
3 Transport pipe with shut-off valve

4.4.5 Grease separator connection station

The connection station (CTU) is required if a partial waste disposal system version of the grease separator is integrated into the food waste treatment system.

Operating modes:

- In automatic mode, the CTU pumps sludge and grease from the grease separator into the collection tank in defined cycles.
- In jog mode, grease and sludge can be pumped out of the grease separator manually.

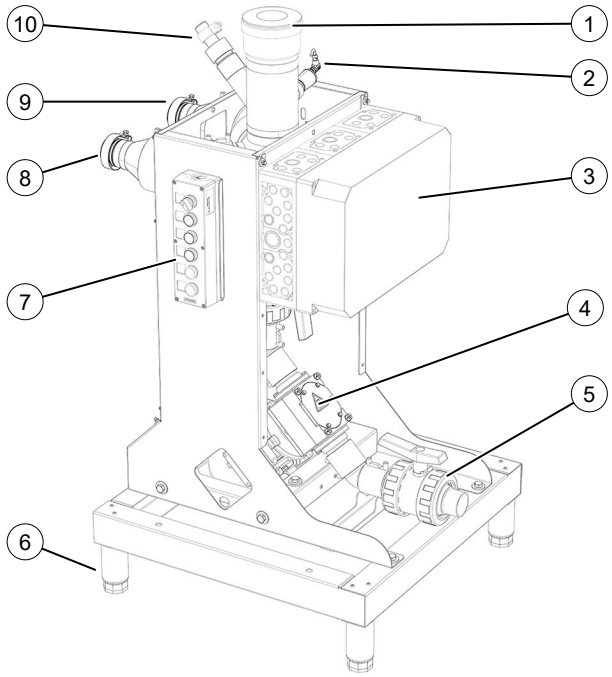


Fig. 17: Connection station (CTU)

1 Maintenance opening
2 Overfill sensor
3 Control box
4 Impeller pump
5 Transport pipe to the collection tank
6 Adjustable machine foot (4x)
7 Control elements
8 Transport pipe for grease/sludge
9 Transport pipe for grease/sludge
10 Aeration/vent pipe

Operating element	Function
	**[AUTO/JOG]** switch: Switches between automatic mode and jog mode.
	**[Grease drain]** button: In jog mode, opens the electric shut-off valve for the grease drain.
	**[Sludge drain]** button: In jog mode, opens the electric shut-off valve for the sludge drain.
	**[Pump]** button: Manual pumping in jog mode.
Fault signal lamp	Lights up red =fault
Readiness for operation signal lamp	Lights up green = ready for operation

Tab. 4: Operating elements of the connection station (CTU)

4.5 Control elements

4.5.1 Touchscreen

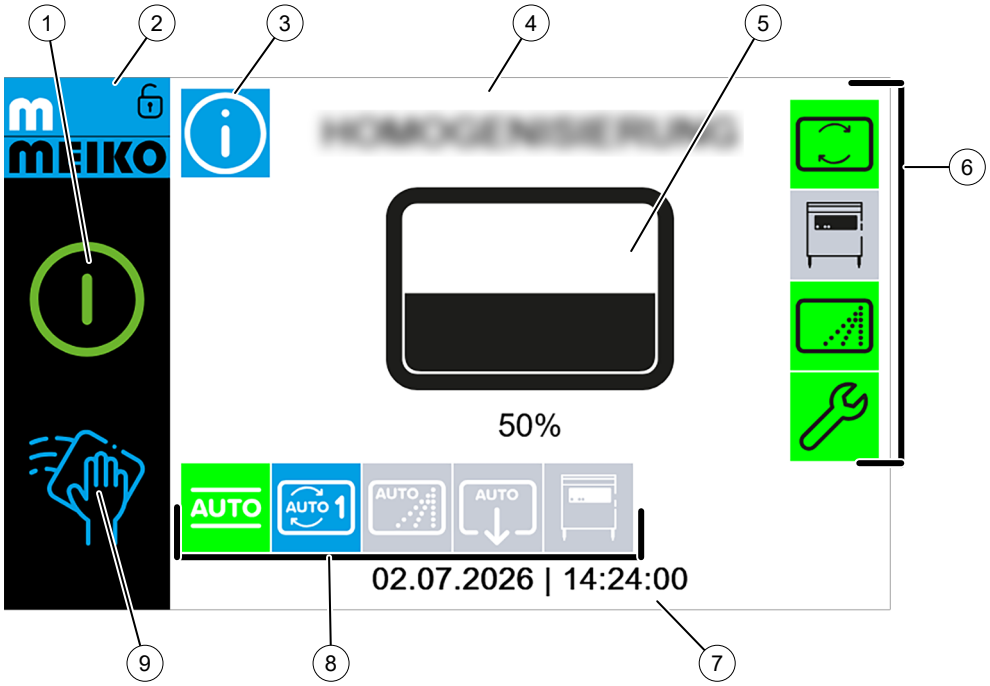


Fig. 18: Start screen

1 **[On/off]** soft key
2 MEIKO soft key for login
3 i-menu soft key (login required)
4 Status message
5 Collection tank level indicator
6 Progress bar
7 Date/time display
8 Function soft keys (login required)
9 **[Clean touchscreen]** soft key

4.5.2 Soft keys

Settings and functions are operated via the soft keys on the touchscreen. Individual functions are active or inactive depending on the authorisation level, configuration and status of the system.

Soft key	Function
	Confirm: ▪ Confirms messages on the touchscreen.
	Cancel: ▪ Cancels an input and returns to the previous menu item.
	Back: ▪ Close the window and go back one level.
 	Downward/upward arrow: ▪ Scrolls through the i-menu.
	Arrow to the left/right: ▪ Scroll horizontally.

Soft key	Function
	
	Reset: ▪ Reset time and counter values.
	Import: ▪ Import parameter set from the PLC.
	Export: ▪ Save parameter set in the PLC.
	Exit application: ▪ Exits the running application and displays the Siemens Control Panel.
	Restart the touch panel: ▪ Reboots the touch panel.

Tab. 5: Soft keys for navigation

Soft key	Function
	Login: ▪ Press and hold to log in for extended authorisations. ▪ A lock symbol is displayed when the registration is confirmed. ➦ *Chapter 9.7.1 'Logging in with authorisation level' on page 37*
	i-menu: ▪ Opens the menu levels for machine functions and settings. ➦ *Chapter 4.6 'Menu overview' on page 27* ▪ Login required.
	On/off: ▪ Switches the tank system on and off. System status: ▪ Grey: System is switched off or fault pending. ▪ Flashing green: System is ready for operation. ▪ Steady green: System is in operation.
	Clean touchscreen: ▪ The touchscreen is locked for a defined period of time in order to clean it. ▪ The function is available in the *'MACHINE OFF'* status.
	Operating mode: ▪ Switches between automatic mode and jog mode. ▪ Green: Automatic operation is switched on. ▪ Blue: Jog mode is switched on. ▪ Login required.
	Homogenisation: ▪ Starts homogenisation in jog mode. ▪ Homogenisation duration can be selected via 4 preset programmes. The respective programme number is displayed. ▪ Login required.

Soft key	Function
	Tank flushing: ■ Starts tank flushing in jog mode. ■ Login required.
	Discharge: ■ Starts the discharge process in automatic operation. ■ Quad tank system only. ■ Only for system configuration with discharge assistance and mechanical shut-off valves. ■ Login required. Active when a mechanical shut-off valve has been moved to the discharge position.
	Infeed station: ■ Switches between the connected infeed stations. ■ Open the menu page to display the status and condition of the infeed stations. ■ Login required.

Tab. 6: Soft keys for functions

4.5.3 Status symbols

Symbol	Meaning
	**Collection tank** ■ Steady green: Collection tank is OK ■ Steady red: Fault with the radar sensor; the overfill sensor has been triggered ■ Grey: System is not switched on
	**Fill level 80%** ■ Steady yellow: Fill level warning at 80% ■ Grey: System is not switched on
	**Fill level 100%** ■ Steady yellow: Fault, discharging required ■ Grey: System is not switched on
	**Discharging** ■ Steady green: Discharging active ■ Steady red: Fault ■ Grey: System is not switched on
	**Homogenisation** ■ Steady green: Homogenisation active ■ Steady red: Fault ■ Grey: System is not switched on
	**Infeed station** ■ Steady green: All infeed stations are ready for operation ■ Steady red: At least one infeed station is not ready for operation ■ Grey: No infeed station has been configured in the menu settings, or the system is not switched on

Symbol	Meaning
	**Cleaning unit** ■ Steady green: Cleaning unit is OK ■ Steady red: Fault in the cleaning unit ■ Grey: Cleaning unit not configured in the menu settings; the system is not switched on
	**Service interval** ■ Steady green: Service interval not yet reached ■ Steady yellow: Service interval reached, perform maintenance ■ Flashing yellow: Service interval exceeded ■ Grey: System is not switched on

4.6 Menu overview

The table describes the menu items in the i-menu, along with their respective functions and the authorisation level required for each.

Menu	Function depending on the authorisation level	0	1	2	3
	**Start screen** ■ Displays start screen	x	x	x	x
	**Messages** ■ Displays alarm and warning messages ■ Confirms messages	x	x	x	x
	**Operational times** Display values: ■ Displays various counter readings and machine operational times	x	x	x	x
	**User manual** ■ QR code to download the user manual	x	x	x	x
	**Date and time** ■ Setting the date and time ■ Seasonal clock change	x	x	x	x
	**Global settings** ■ Language setting ■ Changes global settings (from authorisation level 2)		x	x	x
	**System information** ■ Software version ■ Firmware PLC ■ Serial number of the machine ■ Machine type: technical type designation	x	x	x	x
	**Tank configuration** ■ Selection of collection tank version ■ Sets tank volume			x	x
	**Infeed station configuration** ■ Allocation of station places ■ Boost pump (BP)			x	x

Menu	Function depending on the authorisation level	0	1	2	3
	**Manual operation** ■ Selection of individual components for manual control			x	x
	**Machine configuration** ■ Sets system configuration			x	x
	**Service** ■ Display of the I/O signals of the control system			x	x

Tab. 7: Menu items

4.7 Workstations

The workstation for the trained operating personnel is located in front of the system control elements.

Tasks for the operating personnel:

- Switches the tank system on and off.
- View the system status.

5 Technical data

This section lists all technical data relevant for the safe and proper operation of the system. Further and detailed information can be found in the related documents (wiring diagram, assembly plan, supplier documentation).

5.1 Dimensions and weights

Material	PE		
Volume	2000 l	3000 l	4000 l
Length	2200 mm	2350 mm	2550 mm
Width	760 mm	1000 mm	1000 mm
Height	1750 mm	2000 mm	2000 mm
Weight	115 kg	170 kg	240 kg

Tab. 8: Rectangular tank, installation at ground level

Material	PE			
Volume	3650 l	5650 l	7650 l	9650 l
Length	1500 mm	2250 mm	3000 mm	3750 mm
Ø	1950 mm	1950 mm	1950 mm	1950 mm
Weight	200 kg	280 kg	360 kg	440 kg

Tab. 9: Cylindrical tank, installation at ground level

Material	PE			
Volume	5000 l	8500 l	12500 l	16000 l
Length	2330 mm	3670 mm	5010 mm	6350 mm
Ø	2024 mm	2024 mm	2024 mm	2024 mm
Weight	365 kg	560 kg	755 kg	955 kg

Tab. 10: Cylindrical tank, underground tank

Material	Concrete		
Volume	5000 l	8000 l	12400 l
Length	3670 mm	4460 mm	4050 mm
Ø	2300 mm	2300 mm	2800 mm
Weight	10250 kg	12550 kg	15060 kg

Tab. 11: Cylindrical tank, underground tank

5.2 Ambient conditions

Permissible ambient temperature	5 ... 40°C
Permissible storage temperature	5 ... 40°C
Relative humidity	< 90%
Permissible height of the installation site above sea level	1000 m

Tab. 12: Ambient conditions

6 Transportation

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- Carrier

For more information on the required qualifications, see ➥ *Chapter 3.8 'Personnel qualification' on page 14*.

6.1 Checking the delivery

1. Check the delivery for completeness using the order confirmation from MEIKO or the delivery note.
2. If parts of the delivery are missing, complain immediately to the forwarding agent and notify MEIKO.
3. Check the delivery for transport damage.
4. If transport damage is visible:
   - Do not accept delivery or accept delivery subject to compensation.
   - Document the damage in the delivery documents, e.g. with photographs.
   - Report the damage in writing to MEIKO. Attach photographs.

   ➥ The delivery has been checked for completeness and transport damage.

6.2 Transporting by crane

Tanks can be transported by crane. They are equipped with appropriate attachment points for lifting gear.

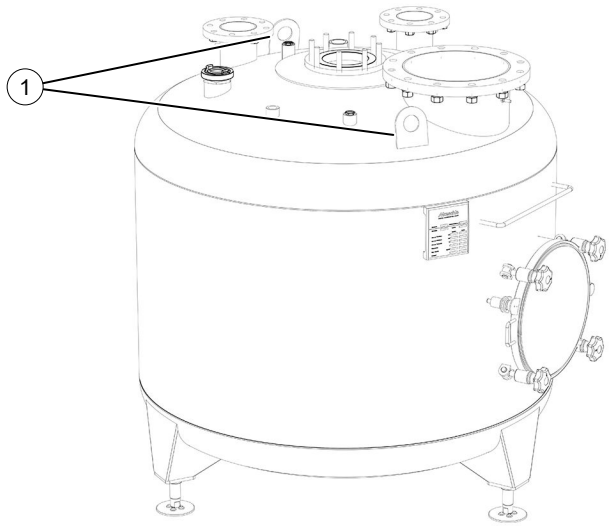


Fig. 19: Attachments points (1) for lifting gear on a tank (example)

⚠ DANGER

Danger to life due to suspended load!

Falling loads can lead to serious injuries or death.

- Never transport loads over people or hazardous areas.
- Never stand under suspended loads.
- Only use suitable, safe lifting gear.
- Wear a hard hat and safety shoes.

Protective equipment:

- Industrial safety helmet
- Safety shoes

Material:

- Lifting gear

► The tank has been drained and all components have been dismantled.

1. Observe the transport instructions and empty weight of the tank (see type plate).
2. Attach the tank to the attachment points using the lifting gear and transport it horizontally using a crane.
   ➡ The tank is transported safely and securely.

6.3 Transport with the pallet truck

The machine is securely fixed to a pallet ex works. Larger machines may be dismantled into smaller units and packed on separate pallets for safe transport.

⚠ CAUTION

Risk of crushing due to the machine tipping over!

- Transport work must be performed only by qualified persons.
- Please note safety instructions on the packaging.
- Always transport the machine only on the supplied wooden frame.
- Wear safety shoes.

Protective equipment:

- Safety shoes

1. Ensure that all components on the pallet are secured against tipping over and falling off.
2. Carefully lift the pallet using the lift truck and transport it to its destination.
3. Set the pallet down at its destination.
   ➡ The machine was safely transported and can be unpacked.

6.4 Disposal of the packaging material

All the packaging materials are recyclable. These should be recycled or disposed of in accordance with local regulations.

The following materials may be used:

- Wood for pallets
- PE foil
- Foam material
- Cardboard packaging
- Steel strapping for packaging straps
- Polypropylene for packaging straps
- Anti-slip mats made from nitrile butadiene rubber
- Stainless steel for transport locks

7 Assembly

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- MEIKO authorised service technician

For more information on the required qualifications, see ➥ *Chapter 3.8 'Personnel qualification' on page 14*.

The system is set up and installed by MEIKO!

Due to its complexity, the system is installed and assembled on site by MEIKO.

7.1 On site requirements

This section contains information and specifications on the on-site requirements that must be observed to ensure safe operation of the machine throughout all phases of its life cycle.

7.1.1 Requirements of the electrical system

Wiring diagram

Information on the on-site electrical requirements is contained in the wiring diagram.

7.1.2 Requirements for the fresh water connection

Permissible water hardness	0 – 14 °dH
Permissible temperature range	5 – 30°C
Permissible water pressure	200 – 1000 kPa (2 – 10 bar)
Connection	DN20 ¾ AG
Fine filter	≤ 100 µm

Tab. 13: Fresh water connection

- Fresh water connections must comply with the locally applicable regulations (e.g. DIN EN 1717).
- Install a shut-off valve locally in each fresh water supply line; the device must be easily accessible for the operating personnel.
- Only connect the machine using suitable hoses and seals. Only use hoses if in an intact condition!
- When replacing an old machine with a new one, make sure that the existing feed hose is exchanged for the new feed hose supplied with the machine.
- From a microbiological perspective, the fresh water must be of drinking water quality. This also applies to treated water.
- For Australia/New Zealand: All work must be carried out in accordance with AS/NZS 3500.1.

8 Commissioning



The system is commissioned by MEIKO.

Due to its complexity, the system is commissioned by MEIKO.

9 Operation/use

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- Operating personnel

For more information on the required qualifications, see ➥ *Chapter 3.8 'Personnel qualification' on page 14*.

9.1 Switching on the system

► The system is ready for operation.

1. Turn on the main switch on the control cabinet.
   ➡ The control system boots up. When the boot process is complete, the start screen is displayed on the touchscreen.
2. Press the **[On/Off]** soft key.
   ➡ The system has been switched on. It starts to work in automatic mode.

9.2 Selecting the homogenisation programme

You can choose between four programmes for homogenisation. The currently selected programme is indicated by a number on the **[Homogenisation]** soft key. The parameters of the individual programmes can be set in the i-menu with the appropriate authorisation.

► Automatic mode is active.

Tap the **[Homogenisation]** soft key several times until the desired programme is selected.

➡ The selected homogenisation programme is active.

9.3 Displaying the fill level forecast

The fill level forecast makes it possible to estimate when the discharge process should be scheduled. It shows on the touchscreen how many days are left until the collection tank is expected to be full. If the remaining time is less than 24 days, a date is also displayed on which the fill level is expected to reach 100%. This function is a calculation performed by the control unit and is intended as a guide.

Tap the date/time display on the touchscreen.

➡ The display changes to show the fill level forecast. After a defined time, it switches back to the date display.

9.4 Changing operation type

► Automatic mode is active.

1. Log in to the touchscreen with authorisation level 1. ➥ *Chapter 9.7.1 'Logging in with authorisation level' on page 37*
   ➡ The soft keys for additional functions are displayed on the touchscreen.
2. Tap the **[Operating mode]** soft key.
   ➡ Jog mode is activated, the soft key lights up green. Individual functions can be operated manually.
3. To switch to automatic mode, tap the **[Operating mode]** soft key again.
   ➡ The operating mode has changed.

9.5 Discharging

The collection tank can be drained during operation, regardless of the operating mode or operating status. When the fill level reaches 100%, the system stops with a fault.

Arrange for discharging in good time!

Contact the disposal company in good time to prevent the system from stopping when the tank is full.

Variant with ascending pipe, without shut-off valve

This variant has no pump and no shut-off valve on the collection tank. Pumping is carried out solely by the pump of the emptying vehicle.

1. Remove the blind coupling from the drain nozzle on the collection tank.
2. Connect the hose from the emptying vehicle to the drain nozzle.
3. Start the discharge process on the emptying vehicle.
4. Stop the discharge process when the collection tank and discharge pipe are completely empty.
5. Disconnect the hose and close the drain nozzle with the blind coupling.
   ➡ The discharge process is complete and the biomass can be transported away.

Variant with pump and electrically controlled shut-off valves

The status of the shut-off valves is monitored. The discharge process can be started when the shut-off valves are in the correct position.

1. Remove the blind coupling from the drain nozzle on the collection tank.
2. Connect the hose from the emptying vehicle to the drain nozzle.
3. Start the discharge process on the emptying vehicle.
4. Start the discharge process with the key switch on the operating panel.
   ➡ The signal lamp lights up.
5. When the signal lamp goes out, end the discharge process on the operating panel using the key switch.
6. Stop the discharge process on the emptying vehicle.
7. Disconnect the hose and close the drain nozzle with the blind coupling.
   ➡ The discharge process is complete and the biomass can be transported away.

9.6 Switching off the system

► The food waste supply is switched off.

Turn off the main switch.

➡ The system is switched off. For maintenance and repair work, secure the main switch against being turned on again. The power supply is disconnected. The supply of food waste is no longer enabled.

9.7 Modifying settings

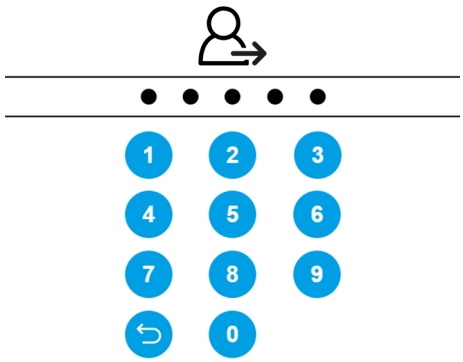
9.7.1 Logging in with authorisation level

Depending on the authorisation level, settings can be displayed and parameters changed. The authorisation level is selected via the service code.

Authorisation level	Service code	Rights
0	-	Operator level: ■ Read-only authorisation ■ Restricted access to the i-menu
1	10001	Customer level: ■ The required functions can be carried out ■ Functional settings in the i-menu can be changed

Tab. 14: Authorisation levels

1.



Press and hold the **[MEIKO]** soft key.

➡ The entry for the service code appears.

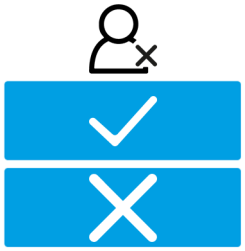
2. Enter and confirm the service code.

➡ The user is logged in with the respective authorisation level. A lock symbol is displayed in the **[MEIKO]** soft key. If an incorrect service code is entered, an error message will appear. Please try again.

9.7.2 Logging out

► The user has logged in to the system.

1.



Touch the **[MEIKO]** soft key.

➡ The logout screen is displayed.

2. Confirm logout with the **[Confirm]** soft key.

➡ The user is logged out.

9.7.3 Setting the date and time

► The operator is logged in with authorisation level 1. ➥ *Chapter 9.7.1 'Logging in with authorisation level' on page 37*

1. Open the *'Global settings'* menu item.
2. Touch the **[Date/time settings]** soft key.

➡ The settings screen is displayed.

3. Touch the date field or time field.

➡ A keypad is displayed.

4. Enter the desired values using the keypad and confirm with the **[Return]** soft key on the keypad.
5. Leave the menu level with the **[Back]** soft key.

➡ The settings are saved. The date and time are set.

9.7.4 Changing display language

► The operator is logged in with authorisation level 1. ➥ *Chapter 9.7.1 'Logging in with authorisation level' on page 37*

1. Open the *'Global settings'* menu item.
2. Touch the *'Display language'* drop-down menu.

➡ The available languages are displayed.

3. Touch the desired language.

➡ The language is set.

9.7.5 Changing homogenisation parameters

The parameters of the individual homogenisation programmes can be adjusted as required.

► The operator is logged in with authorisation level 1. ➥ *Chapter 9.7.1 'Logging in with authorisation level' on page 37*

1. Open the *'Settings'* menu item.
2. Navigate to the *'Homogenisation'* menu item.

3. For the homogenisation programmes P1 to P4, enter and confirm the following parameters:
   - *'Minimum term'*
   - *'Break time'*

   ➡ The homogenisation programmes have been changed.

9.8 Assistance in case of malfunctions

The table lists typical faults with their possible causes and remedies. Unless otherwise specified, the causes can be rectified by operating personnel or a service technician.

Fault	Possible cause	Remedy
The system has no power.	The main switch on site is not turned on.	Turn on main switch on site.
	The main switch is turned off.	Turn on the main switch.
The system is switched on and at a standstill. The display shows the fault message: *'Collection tank full'*	Collection tank is full.	Arrange for tank to be drained.
The system is at a standstill with the fault message *'Ball valves: Position implausible'*.	Electric shut-off valves cannot move to the end position, e.g. due to a blockage caused by foreign objects.	Switch off the system at the main switch, wait a few seconds and then switch it on again. Open and close the shut-off valves. This can release blockages. If the fault is not rectified, contact Service.

Tab. 15: Faults and their remedies

9.8.1 Operating the connection station (CTU) manually

If servicing is required, it may be necessary to manually pump grease and sludge out of the grease separator (optional) via the connection station (CTU). ➦ *Chapter 11.1.7 'Grease separator connection station (CTU)' on page 42*

1. Set the **[AUTO/JOG]** switch on the CTU to jog mode.
2. Press and hold the **[Grease drain]** button.
3. Press the **[Pump]** button for a few seconds, repeat if necessary.

   ➡ Grease is pumped out of the grease separator as long as the **[Pump]** button is pressed. Monitor the transparent hoses.
4. When no more grease is being pumped into the transparent hose, release the buttons.
5. To pump out sludge, repeat the process using the **[Sludge]** button.

   ➡ Sludge is pumped out of the grease separator as long as the **[Pump]** button is pressed. Monitor the transparent hoses.
6. When clear water is flowing through the transparent hose, release the buttons.
7. Set the **[AUTO/JOG]** switch to automatic mode.

   ➡ The grease separator has been emptied.

10 Cleaning

10.1 Flushing the collection tank

The inside of the collection tank can be flushed with a cleaning unit (optional) to remove coarse soiling before a longer period of inactivity or before the system is decommissioned. Before flushing, empty the collection tank.

► An optional cleaning unit is integrated into the tank system.

1. Before flushing, empty the collection tank.
2. Stop the supply of food waste.
3. Activate jog mode.

   ➥ *Chapter 9.4 ‘Changing operation type’ on page 35*
4. Press and hold the **[Tank flushing]** soft key.

   ➡ The cleaning unit will flush the inside of the collection tank for as long as the soft key is pressed. Then discharge any remaining water from the collection tank.

10.2 Cleaning the touchscreen

A soiled touchscreen can impair usability.

Personnel:

- Operating personnel

Tool:

- Lint-free cloth

1. Depending on the version, lock the touch function, select Clean screen or switch off the machine/system.
2. Wipe the touchscreen with a slightly damp, lint-free cloth.

   ➡ The touchscreen has been cleaned.

11 Maintenance

11.1 Maintenance plan

The maintenance plan describes the maintenance work recommended by MEIKO. For individual components, additional or different maintenance activities and intervals may be specified in the supplier documentation that are not listed in this maintenance plan. MEIKO recommends observing the contents of the supplier documentation and, if necessary, carrying out further maintenance measures in accordance with the information provided there.

11.1.1 Overall system

Interval	Maintenance work	Personnel
Annually	Check safety labels and signs.	Service technician
	Check entire system for tightness.	Service technician
	Check casing, cable entries and control elements of control cabinet for damage.	Service technician
	Check that safety equipment is working.	MEIKO authorised service technician
	Check that system is working correctly.	MEIKO authorised service technician

11.1.2 Rectangular PE tank

Interval	Maintenance work	Personnel
Every six months	Check level sensor for soiling and clean if necessary.	Service technician
	Check overfill prevention device for soiling and clean if necessary.	Service technician
	Stirrer: Check for unusual running noises.	Service technician
Annually	Stirrer: Check impeller for build-up and tangles (clogging) and remove if necessary.	Service technician
	Check stirrer for secure fit, leak tightness and correct operation.	Service technician
	Check the function of the pipe ventilator for exhaust air	MEIKO authorised service technician
	Check gate valve for secure fit, leak tightness and correct operation	MEIKO authorised service technician
	Check shut-off valves for secure fit, leak tightness and correct operation	MEIKO authorised service technician
	Check pump for leak tightness, wear and correct operation	MEIKO authorised service technician

11.1.3 Cylindrical PE tank

Interval	Maintenance work	Personnel
Every six months	Check level sensor for soiling and clean if necessary.	Service technician
	Check overfill prevention device for soiling and clean if necessary.	Service technician

Interval	Maintenance work	Personnel
Annually	Check the function of the pipe ventilator for exhaust air	MEIKO authorised service technician
	Check gate valve for secure fit, leak tightness and correct operation	MEIKO authorised service technician
	Check shut-off valves for secure fit, leak tightness and correct operation	MEIKO authorised service technician
	Check pump for leak tightness, wear and correct operation	MEIKO authorised service technician

11.1.4 Underground concrete tank

Interval	Maintenance work	Personnel
Every six months	Check level sensor for soiling and clean if necessary.	Service technician
	Check overfill prevention device for soiling and clean if necessary.	Service technician
Annually	Check pump for wear and correct operation	MEIKO authorised service technician
	Check sensor retaining plate for damage.	MEIKO authorised service technician

11.1.5 PE underground tank

Interval	Maintenance work	Personnel
Every six months	Check level sensor for soiling and clean if necessary.	Service technician
	Check overfill prevention device for soiling and clean if necessary.	Service technician
Annually	Check pump for wear and correct operation	MEIKO authorised service technician
	Check sensor retaining plate for damage.	MEIKO authorised service technician

11.1.6 BoosterPump

The standard maintenance intervals are specified for the BoosterPump. The maintenance intervals for the respective upstream impeller pumps at the infeed stations are decisive. Their maintenance intervals may vary depending on the model.

Interval	Maintenance work	Personnel
Annually	Replace the impeller pump maintenance kit.	Service technician
	Check the impeller pump for leaks.	Service technician
	Check coupling for wear and tear.	Service technician

11.1.7 Grease separator connection station (CTU)

Interval	Maintenance work	Personnel
Annually	Replace the impeller pump maintenance kit.	Service technician

Interval	Maintenance work	Personnel
Annually	Check the impeller pump for leaks.	Service technician
	Check coupling for wear and tear.	Service technician

11.1.8 Discharge box

Interval	Maintenance work	Personnel
Every six months	Check the couplings for leaks.	Service technician
	Check couplings for external damage and secure fit.	Service technician
	Check control elements for damage and correct operation.	Service technician
Annually	Check discharge box for damage and secure fit	Service technician
	Check door seal for damage and replace if necessary	Service technician
	Trace heating (option): Check for correct operation.	Service technician

11.2 Maintenance activities

⚠ CAUTION

Health hazard due to noise pollution in the wet waste room!

Exposure to noise in the wet waste room can lead to permanent hearing damage without suitable protection.

- If possible, switch off the system before starting any work in the wet waste room.
- Always wear hearing protection in the wet waste room when the system is switched on.

11.2.1 Checking the impeller pump for leaks

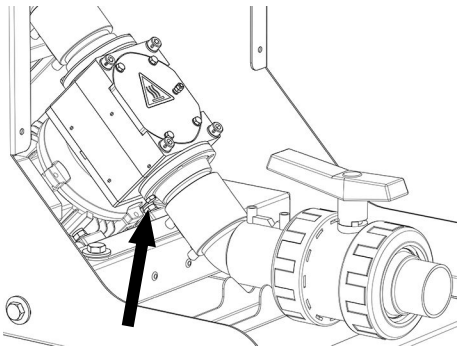
Identical impeller pumps

The impeller pumps in the BoosterPump and the grease separator connection unit (CTU) are identical. The procedure described applies to both components.

Personnel:

- Operating personnel

1.



Check the recess of the adapter plate at the bottom on the pump head (arrow) for escaping residues.

2. If residue is clearly visible, the radial shaft seal must be replaced.

➡ The impeller pump has been checked for leaks.

11.2.2 Check safety labels and signs

Safety labels and signs on the product must always be clearly legible.

Personnel:

- Service technician

1. Check all safety labels and signs for legibility.
   ➥ *Chapter 3.6 ‘Positions of the safety labels’ on page 12*
2. Replace damaged or illegible safety labels and signs. These can be reordered at MEIKO.
   ➧ The safety levels and signs have been checked.

12 Decommissioning

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- Service technician

For more information on the required qualifications, see ➥ *Chapter 3.8 ‘Personnel qualification’ on page 14*.



Integrated grease separator

If a partial waste disposal system version of the grease separator is connected, this must also be decommissioned.

Arrange for the tank to be drained in good time before decommissioning the tank system.

1. Flush the infeed stations upstream of the tank system with tap water (start cycle) and then switch off.
2. Completely empty the system and all connected components.
3. Switch off the water supply so that connected components do not fill up.
4. Drain the collection tank.
5. Clean and pump out all connected components.
6. Drain the remaining water from the collection tank.
7. Switch off the system at the main switch and secure it against being switched back on.
   ➡ The system has been decommissioned.

13 Dismantling and disposal

13.1 Removal

The system must be separated into smaller units for disposal. The separation points are marked on the assembly plan. The wiring diagram shows the positions of the electrical connections as well as the connections for protective equipotential bonding.

Personnel:

- Service technician

Protective equipment:

- Safety glasses
- Protective gloves, mechanical hazard
- Safety shoes
- Protective work clothing

► The system has been decommissioned.
➥ *Chapter 12 ‘Decommissioning’ on page 45*

1. Disconnect the electrical connections of all components.
2. Disconnect the compressed air connections of all components.
3. Disconnect the protective equipotential bonding on all components.
4. Separate the system at its separation points according to the assembly plan and secure the individual elements on pallets for transport.
   ➥ The system is prepared for removal.

13.2 Disposal

Symbol	Description
	The product is marked with this symbol. Apply the local regulations for proper disposal of the old appliance. This includes separate collection and subsequent recycling in order to reutilise raw materials. Commission a specialised company for environmentally friendly disposal and reuse.

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